

## In the Claims

Please amend the claims as follows:

1-13. (Previously cancelled)

14. (Currently amended) An adeno-associated virus vector comprising a nucleotide sequence encoding a fusion polypeptide, the fusion polypeptide comprising:

a structural human papillomavirus (HPV) polypeptide encoded by a structural papillomavirus gene selected from the group consisting of L1-ORF, L2-ORF and fragments thereof; and

~~an non-transforming~~ early papillomavirus polypeptide encoded by an early papillomavirus gene selected from the group consisting of: E6-ORF and E7-ORF, wherein a part of the early papillomavirus gene has been deleted thereby rendering the early papillomavirus polypeptide non-transforming, wherein the human papillomavirus is selected from the group consisting of HPV 16, HPV 18, HPV 33, HPV 35 and HPV 45, and fragments thereof, and wherein the 3' end of the structural papillomavirus gene is ligated to the 5' end of the early papillomavirus gene to encode for the fusion polypeptide having a C-terminus of the structural papillomavirus polypeptide connected to a N-terminus of the non-transforming early papillomavirus polypeptide.

~~15. — (Original) The vector of claim 14, wherein the structural papillomavirus polypeptide is an HPV polypeptide.~~

~~16. — (Original) The vector of claim 15, wherein the HPV is selected from the group consisting of HPV 16, HPV 18, HPV 33, HPV 35 and HPV 45.~~

~~17. — (Previously presented) The vector of claim 14, wherein the non-transforming early papillomavirus polypeptide is an HPV polypeptide.~~

~~18. — (Original) The vector of claim 17, wherein the HPV is selected from the group consisting of HPV 16, HPV 18, HPV 33, HPV 35 and HPV 45.~~

~~19. (Previously presented) The vector of claim 14 wherein, both the structural papillomavirus polypeptide and the non-transforming early papillomavirus polypeptide are HPV polypeptides.~~

~~20. (Original) The vector of claim 19, wherein the HPV is selected from the group consisting of HPV 16, HPV 18, HPV 33, HPV 35 and HPV 45.~~

21. (Original) The vector of claim 14, wherein the nucleotide sequence is under the control of a constitutive promoter.

22. (Original) The vector of claim 14, wherein the nucleotide sequence is under the control of an inducible promoter.

23. (Original) The vector of claim 14, wherein the nucleotide sequence is under the control of a tissue-specific promoter.

24. (Original) The vector of claim 14, wherein the nucleotide sequence is under the control of a tumor-specific promoter.

25. (Original) The vector of claim 14, wherein the structural papillomavirus polypeptide is encoded by L1-ORF.

26. (Previously cancelled)

27. (Original) The vector of claim 14, wherein the structural papillomavirus polypeptide is encoded by L2-ORF.

28. (Previously cancelled)

29. (Original) The vector of claim 14, wherein the structural papillomavirus polypeptide is encoded by HPV 16 L1 ORF.

30-37. (Previously cancelled)

38. (Currently amended) The vector of claim 14, wherein the ~~non-transforming~~ early papillomavirus polypeptide is encoded by E6-ORF.

~~39. (Previously presented) The vector of claim 14, wherein the non-transforming early papillomavirus polypeptide is encoded by a fragment of E6-ORF.~~

40. (Currently amended) The vector of claim 14, wherein the ~~non-transforming~~ early papillomavirus polypeptide is encoded by E7-ORF.

~~41. (Previously presented) The vector of claim 14, wherein the non-transforming early papillomavirus polypeptide is encoded by a fragment of E7-ORF.~~

42. (Currently amended) The vector of claim 14, wherein the ~~non-transforming~~ early papillomavirus polypeptide is encoded by HPV 16 E6-ORF.

43. (Currently amended) The vector of claim 14, wherein: the ~~non-transforming~~ early papillomavirus polypeptide is encoded by E6-ORF ~~or a fragment thereof~~; and the structural papillomavirus polypeptide is encoded by L2-ORF or a fragment thereof.

44. (Currently amended) The vector of claim 14 wherein:  
the ~~non-transforming~~ early papillomavirus polypeptide is encoded by HPV 16 E7-ORF or a fragment thereof; and  
the structural papillomavirus polypeptide is encoded by HPV 16 L2-ORF or a fragment thereof.

45. (Currently amended) The vector of claim 14 wherein:  
the ~~non-transforming~~ early papillomavirus polypeptide is encoded by HPV 16 E6-ORF or a fragment thereof; and  
the structural papillomavirus polypeptide is encoded by HPV 16 L2-ORF or a fragment thereof.

46. (Currently amended) The vector of claim 14 wherein:  
the ~~non-transforming~~ early papillomavirus polypeptide is encoded by HPV 16 E7-ORF or a fragment thereof; and  
the structural papillomavirus polypeptide is encoded by HPV 16 L2-ORF or a fragment thereof.

47. (Currently amended) The vector of claim 14 wherein:

the ~~non-transforming~~ early papillomavirus polypeptide is encoded by HPV 18 E6-ORF or a fragment thereof; and

the structural papillomavirus polypeptide is encoded by HPV 18 L2-ORF or a fragment thereof.

48. (Currently amended) The vector of claim 14 wherein:

the ~~non-transforming~~ early papillomavirus polypeptide is encoded by HPV 18 E7-ORF or a fragment thereof; and

the structural papillomavirus polypeptide is encoded by HPV 18 L2-ORF or a fragment thereof.

~~49. (Previously presented) An adeno-associated virus vector comprising a nucleotide sequence encoding a fusion polypeptide, the fusion polypeptide comprising:~~

~~a structural human papillomavirus polypeptide encoded by a structural papillomavirus gene selected from the group consisting of L1-ORF and L2-ORF; and~~

~~a non-transforming early papillomavirus polypeptide encoded by an early papillomavirus gene that has been mutated by deletion of a nucleotide sequence to remove any ability of an expressed early papillomavirus polypeptide to participate in transformation, wherein the early papillomavirus gene is selected from the group consisting of: E6-ORF and E7-ORF, and fragments thereof, and wherein the 3' end of the structural papillomavirus gene is ligated to the 5' end of the early papillomavirus gene to encode for the fusion polypeptide having a C-terminus of the structural papillomavirus polypeptide connected to a N-terminus of the non-transforming early papillomavirus polypeptide.~~

~~50. (Previously presented) An adeno-associated virus vector comprising a nucleotide sequence encoding a fusion polypeptide of a human papillomavirus, the fusion polypeptide comprising:~~

~~a structural human papillomavirus polypeptide encoded by a structural open reading frame (ORF) selected from the group consisting of L1-ORF and L2-ORF; and~~

~~a non-transforming early human papillomavirus polypeptide encoded by an early open reading frame (ORF) selected from the group consisting of: E6-ORF and E7-ORF, wherein the 3' end of the structural ORF is ligated to the 5' end of the early ORF to encode for the fusion polypeptide having a C-terminus of the structural human papillomavirus polypeptide connected to a N-terminus of the non-transforming early human papillomavirus polypeptide, and wherein the human papillomavirus is selected from the group consisting of HPV 16, HPV 18, HPV 33, HPV 35 and HPV 45.~~

51. ~~(Previously presented) An adeno-associated virus vector comprising a nucleotide sequence encoding a fusion polypeptide, the fusion polypeptide comprising:~~

~~a structural human papillomavirus polypeptide encoded by L1-ORF; and~~

~~a non-transforming early human papillomavirus polypeptide encoded by an early open reading frame ORF selected from the group consisting of: a fragment of E6-ORF and a fragment of E7-ORF and wherein the 3' end of the L1-ORF is ligated to the 5' end of the early ORF to encode for the fusion polypeptide having a C-terminus of the structural human papillomavirus polypeptide connected to a N-terminus of the non-transforming early human papillomavirus polypeptide.~~

52. (Currently cancelled)

53. (Currently amended) An adeno-associated virus vector comprising a nucleotide sequence encoding a fusion polypeptide, the fusion polypeptide comprising:

(a) a structural human papillomavirus polypeptide encoded by HPV16 or 18 structural L1-ORF; and

(b) an non-transforming early papillomavirus polypeptide encoded by an HPV16 or 18 early papillomavirus gene wherein a part of the early papillomavirus gene has been deleted thereby rendering the early papillomavirus polypeptide non-transforming, wherein the early papillomavirus gene is selected from the group consisting of: E6-ORF and E7-ORF, and fragments thereof, and wherein the 3' end of the structural papillomavirus gene is ligated to the 5'

end of the early papillomavirus gene to encode for the fusion polypeptide having a C-terminus of the structural papillomavirus polypeptide connected to a N-terminus of the non-transforming early papillomavirus polypeptide.

54. (Original) The vector of claim 53, wherein the ORFs of (a) and (b) are HPV 16 ORFs.

55. (Original) The vector of claim 53, wherein the ORFs of (a) and (b) are HPV 18 ORFs.

56. (Currently amended) The vector of claim 53 wherein:  
the ORFs of (a) and (b) are HPV 16 ORFs; and  
the ~~non-transforming~~ early human papillomavirus polypeptide is encoded by E6-ORF.

57. (Currently amended) The vector of claim 53 wherein:  
the ORFs of (a) and (b) are HPV 18 ORFs; and  
the ~~non-transforming~~ early human papillomavirus polypeptide is encoded by E6-ORF.

58. (Currently amended) The vector of claim 53 wherein:  
the ORFs of (a) and (b) are HPV 16 ORFs; and  
the ~~non-transforming~~ early human papillomavirus polypeptide is encoded by E7-ORF.

59. (Currently amended) The vector of claim 53 wherein:  
the ORFs of (a) and (b) are HPV 18 ORFs; and  
the ~~non-transforming~~ early human papillomavirus polypeptide is encoded by E7-ORF.

60. (Original) A vaccine composition comprising:  
the vector of claim 14; and  
an auxiliary agent.

61. (Original) The vaccine composition of claim 49, further comprising one or more immune system-activating agents.

62-64. (Previously cancelled)

65. (Currently amended) A method for activating an immune system of a subject comprising administering to the subject an adeno-associated virus vector comprising a nucleotide sequence encoding a fusion polypeptide, the fusion polypeptide comprising:

a structural papillomavirus polypeptide encoded by a structural open reading frame (ORF) selected from the group consisting of: L1-ORF, L2-ORF and fragments thereof; and

~~an non-transforming~~ early papillomavirus polypeptide encoded by an early papillomavirus gene selected from the group consisting of: E6-ORF and E7-ORF, wherein a part of the early papillomavirus gene has been deleted thereby rendering the early papillomavirus polypeptide non-transforming, wherein the human papillomavirus is selected from the group consisting of HPV 16, HPV 18, HPV 33, HPV 35 and HPV 45, and fragments thereof, and wherein the 3' end of the structural papillomavirus gene is ligated to the 5' end of the early papillomavirus gene to encode for the fusion polypeptide having a C-terminus of the structural papillomavirus polypeptide connected to a N-terminus of the non-transforming early papillomavirus polypeptide.

66. (Original) The method of claim 65, wherein the fusion polypeptide is administered as a component of a vaccine composition.